

Appl. No. 09/614,389
Preliminary Amdt. fax-filed on October 15, 2004

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Amendments to the Claims:

Claims 1, 4, 5, 16, 102, and 107 are amended. No claims have been added. Claims 2, 3, 13, 19, 22-23, 28-61, 63, 64, 71-74, 93-101, 103, 104, 106, 108-113 have been canceled. This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claim 1. (currently amended) A method for delivering a therapeutic gas to a person having a nasal cavity lined with a mucous membrane, said method comprising:

generating a flow of a therapeutic gas; and

infusing the nasal cavity to contact the mucous membrane with the flow of therapeutic gas while the person refrains from inhaling the therapeutic gas in order to maintain the concentration of the therapeutic gas in the nasal cavity, wherein the therapeutic gas is selected from the group consisting of carbon dioxide, nitric oxide, helium, dilute mixtures of nitric oxide, and isocapnic mixtures of acid gases.

Claim 2. (canceled)

Claim 3. (canceled)

Claim 4. (currently amended) A method as in claim ~~[[3]]~~ 1, wherein the therapeutic gas ~~consists essentially of~~ comprises carbon dioxide.

Claim 5. (currently amended) A method as in claim ~~[[3]]~~ 1, wherein the therapeutic gas is present in a carrier gas.

Claim 6. (previously presented) A method as in claim 3, wherein generating comprises generating a flow at a rate in the range from 0.5 cc/sec to 20 cc/sec of therapeutic gas.

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Claim 7. (original) A method as in claim 6, wherein the gas flow is continued for from 1 to 100 seconds.

Claim 8. (original) A method as in claim 7, further comprising at least a second infusing step which is continued for from 1 to 100 seconds.

Claim 9. (original) A method as in claim 8, further comprising at least a third infusing step which is continued for from 1 to 100 seconds.

Claim 10. (previously presented) A method as in claim 1, wherein infusing comprises directing the flow of therapeutic gas to one nostril and allowing the flow to exit through at least one other facial orifice selected from the group consisting of the other nostril and the mouth.

Claim 11. (currently amended) A method as in claims 10, ~~or~~ 102, or 107 wherein the person's mouth is closed and the flow exists entirely from the other nostril.

Claim 12. (original) A method as in claim 1, wherein infusing comprises directing the flow of therapeutic gas into the mouth and allowing the flow to exit through the at least one nostril.

Claim 13. (canceled)

Claim 14. (previously presented) A method as in claim 1, further comprising adjusting the flow rate of the gas to a level which the patient perceives is comfortable.

Claim 15. (original) A method as in claim 14, further comprising adjusting the duration of treatment in response to changes in the gas flow rate, where decreases in flow rate result in an increase in treatment time.

Claim 16. (currently amended) A method for generating a therapeutic dosage of gas and delivering said gas to a patient having a nasal cavity, said method comprising:

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releasing from a hand-held dispenser a flow of treatment gas in the range from 0.5 cc/sec to 20 cc/sec to the nasal cavity, wherein the treatment gas comprises a therapeutic gas ~~[[is]]~~ selected from the group consisting of carbon dioxide, nitric oxide, helium, dilute mixtures of nitric oxide, and isocapnic mixtures of acid gases and wherein the patient ~~refrains~~ refrains from breathing the therapeutic gas while the flow enters the nasal cavity in order to maintain the concentration of the treatment gas.

Claim 17. (previously presented) A method as in claim 16, wherein the treatment gas flow consists essentially of carbon dioxide.

Claim 18. (previously presented) A method as in claim 16, wherein the treatment gas flow comprises carbon dioxide in a carrier gas.

Claim 19. (canceled)

Claim 20. (previously presented) A method as in claim 16, wherein the treatment gas further comprises a therapeutic gas and a gas selected from the group consisting of air, oxygen, nitrogen, and halogenated hydrocarbons.

Claim 21. (original) A method as in claim 16, wherein the hand-held dispenser has an outlet that is suitable for sealing against a human nostril.

Claims 22-23. (canceled)

Claim 24. (original) A method as in claim 16, wherein the gas flow is continued for from 1 to 100 seconds.

Claim 25. (original) A method as in claim 24, further comprising at least a second releasing step which is continued for from 1 to 100 seconds.

Claim 26. (original). A method as in claim 25, further comprising at least a third releasing step which is continued for from 1 to 100 seconds.

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Claim 27. (original) A method as in claim 16, wherein releasing comprises adjusting the flow rate to within the 0.5 cc/sec to 20 cc/sec range.

Claims 28-61. (canceled)

Claim 62. (previously presented) A method as in claim 4, wherein the carbon dioxide is present in a carrier gas.

Claims 63-64. (canceled)

Claim 65. (previously presented) A method as in claim 4, wherein generating comprises generating a flow at a rate in the range from 0.5 cc/sec to 20 cc/sec of carbon dioxide.

Claim 66. (previously presented) A method as in claim 65, wherein the gas flow is continued for from 1 to 100 seconds.

Claim 67. (previously presented) A method as in claim 66, further comprising at least a second infusing step which is continued for from 1 to 100 seconds.

Claim 68. (previously presented) A method as in claim 67, further comprising at least a third infusing step which is continued for from 1 to 100 seconds.

Claim 69. (previously presented) A method as in claim 18, wherein the carrier gas is inert.

Claim 70. (previously presented) A method as in claim 17, wherein the carrier gas is biologically active.

Claims 71-74. (canceled)

Claim 75. (previously presented) A method as in claim 5, wherein the therapeutic gas consists of nitric oxide, the carrier gas is non-oxidizing, and the carrier gas and nitric oxide form a dilute mixture of nitric oxide.

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Claim 76. (previously presented) A method as in claim 16, wherein the therapeutic gas consists of nitric oxide, the nitric oxide is present in a carrier gas, said carrier gas being inert and non-oxidizing, and wherein the carrier gas and nitric oxide form a dilute mixture of nitric oxide.

Claims 77-91. (canceled)

Claim 92. (previously presented) A method as in claim 4, wherein the generating step further comprises mixing reagents, which, upon mixing, release carbon dioxide.

Claims 93-101. (canceled)

Claim 102. (currently amended) A method for delivering a therapeutic gas to a breathing person having a nasal cavity lined with a mucous membrane, a trachea and a lung, said method comprising:

generating a flow of a therapeutic gas; and

infusing the nasal cavity to contact the mucous membrane with the flow of therapeutic gas while the person substantially inhibits passage of the therapeutic gas into the trachea and the lung by limiting inhalation of the therapeutic gas to maintain the concentration of the therapeutic gas in the nasal cavity.

Claims 103-104. (canceled)

Claim 105. (previously presented) A method as in claim [[2]] 102, wherein the therapeutic gas consists essentially of carbon dioxide, and wherein the flow consists solely of the therapeutic gas.

Claim 106. (canceled)

Claim 107. (currently amended) A method for delivering a therapeutic gas to a breathing person having a nasal cavity lined with a mucous membrane, said method comprising:
generating a flow of a therapeutic gas; and

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infusing the nasal cavity to contact the mucous membrane with the flow of therapeutic gas, while the person adjusts his breathing pattern to refrain from inhaling the therapeutic gas in order to maintain the concentration of the therapeutic gas in the nasal cavity.

Claims 108-113. (canceled)

Claim 114. (previously presented) A method as in claim 1, 102, or 107, wherein infusing comprises directing the flow of therapeutic gas into both nostrils and allowing the gas to exit through the mouth.